California Natural Gas Vehicle Coalition

Michael L. Eaves
President

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California Energy Commission
Docket Office
Attn: Docket 06-AFP-1
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Subject: Docket 06-AFP-1 - Comment on DRAFT Well to Wheels, Well to Tank, and Tank to Wheels Reports

The California Natural Gas Vehicle Coalition (Coalition) would like to offer the following comments on the Commission DRAFT Well to Wheels Report that incorporates input from a Well to Tank Report and a Tank to Wheels Report. In general the three reports offer an excellent analysis from which to base future policy decisions in California. The reports reflect a great deal of original work by the contractor to modify the GREET model and make it more applicable to California. The following comments represent ways that can improve the overall report.

Emissions Accountablility:

The report does a good job in quantifying the global CO2 emissions for different fuels and their potential fuel processing paths. The report does not use this global approach to identify criteria pollutants and toxics on a global scale. The Coalition understands the rationale for identifying the global CO2 emissions associated with fuels and feels that this same approach should be adopted for criteria and toxic emissions outside of California and outside the U.S.

As many pointed out in the public workshop held on March 2nd in Sacramento, Californians are not content to ignore emissions generated outside the state that are the result of state policy decisions. The Coalition suggests that TIAX refine the current assessment of criteria and toxic emissions to include bar graphs that show the out of state (but still U.S.) emissions and out of U.S. (Rest of World) emissions. This documentation would allow policy makers to determine if there are any emission exports associated with a California move to alternative fuels.

Assumption that Any New Emissions will be fully Offset:

The Coalition is uncomfortable with the treatment of marginal emissions in the analysis especially where it relates to emissions within California. The analyses indicate that any emissions from new fuel production facilities will be fully offset and will therefore result in a zero increase in the total emissions inventory. This is theoretically how it is supposed to work but the emissions inventory of California is growing, and the size of the black box of emissions that the state has to address is increasing. As currently represented in the report, new fuel processing facilities in California will have a zero emissions impact on the state.

The Coalition feels that in order to properly reflect the situation for new fuels processing in California, the criteria and toxic emissions need to be quantified to reflect the potential increase in the state emissions inventory. Once this is done, CARB and local APCDs can then conduct their determination on whether 100% of these emissions can be offset or not. It is inappropriate to arbitrarily assume that these emissions can be offset without knowing their magnitude. The magnitude of emissions from new fuel production facilities could also lead to a determination that California may not want all of that production capacity to be located within the state.

In-state Petroleum Production:

The WTW Report assumes that refinery production in California is finite and won't be expanded. It therefore assumes that any new demand for gasoline and diesel in California will come from out of state and there will be no increase in refinery emissions in California. The Los Angeles Times on March 14th had an article on Chevron indicating that Chevron was looking at incrementally increasing its refinery capacity in the state. The WTW report must consider refinery expansion as a possibility and their potential emissions impact on California.

RPS Sensitivity:

The marginal emissions analyses assume that new fuels production and their resulting emissions will be based on the newest of processing technology where electrical consumption comes from sources that meet California's Renewable Portolio Standards (RPS). This was a topic of concern at the March 2nd workshop. Sensitivity analyses need to be done to determine what the emissions impact will be should the RPS standard not be met.

Marginal Emissions vs. Today's Emissions:

The Coalition is concerned that the current baseline for emissions for gasoline and diesel are not properly captured as a reference for all future fuels and processing paths. The use of marginal emissions (using the best production technology and RPS electricity) and not accounting for criteria emissions produced in out-of-state production leaves one to wonder what the current emissions impacts of existing gasoline and diesel fuels on a per gallon basis are. If for example,

demand growth for gasoline is to be supplied by refineries in Texas or off-shore, what are the criteria emissions associated with those production facilities. Since the emissions requirements for California refineries are more stringent than other parts of the country and world, what will be the emissions impact of California relying upon out-of-state refinery capacity for increased demand vs. pursuing other fuel options for California. The marginal analysis as currently used does not model the changes between today's practices and future scenarios for fuel.

Location of Alternative Fuel Production:

The WTW Report is unclear about the distribution of alternative fuel production between California, the rest of the U.S., Canada, and the rest of the world. There should be some determination of this in order to identify the emission load production will have on the state, and what emission impacts have to be absorbed elsewhere in the country and world.

In the biofuels area, it appears that a significant percentage of growth of feedstocks and production of fuels are assumed to be based in California. If this is so, the criteria emissions from these plants must be determined, and a determination on whether the magnitude of these emissions can be offset within the state must be made.

California Ethanol Production and Impact on Land and Water:

Given the anticipation of a California based biofuels industry to produce ethanol and other biofuels, there is no determination in the WTW Report on the impact that this industry will have on land and water use within the state. Since water is a critical resource for California, and requires energy to move within the state, there needs to be some placeholder in the WTW analyses that captures this need and resulting emissions. The growth and harvest of agricultural crops will also create emissions that may not be captured in this report. Other needs of fertilizer and pesticides must also be calculated in the emissions inventory for agricultural based fuels.

Natural Gas Scenarios:

Natural gas used in the United States is comprised of 98% domestic (North American) gas and 2% import gas in the form of LNG imports. Natural gas use in California can be considered 100% domestic gas since LNG imports on the east coast and gulf do not make their way to California.

The WTW Report discusses the potential of LNG imports to California. In order to reduce confusion between LNG imports to California and LNG transportation fuel use in California – the report should refer to "Natural Gas Imports" rather than "LNG imports". This will prevent any confusion between the source of natural gas and the use of a fuel.

The WTW Report appears to property capture the GHG emissions from of off-shore LNG production facilities and the transportation of that gas to the U.S. Since many of the LNG

production facilities have yet to be built – the Coalition is pleased that the WTW Report will remain open to capture new data on these production facilities and the record modified as needed.

For purposes of the WTW evaluation of fuels, natural gas use as a transportation fuel should be considered as a blend of North American (domestic) gas, California gas (currently about 10% of state's natural gas use) and import natural gas (from offshore LNG). Currently, the amount of natural gas imports in California is zero. Once the Sempra terminal in Baha, Mexico is operational (2008), California will receive some of that output into the southern regions of California. In the long-term, DOE projects that 15-20% of California's natural gas could be from off-shore imports. The WTW assessment should portray natural gas as a transportation fuel as a blend of in-state production, North American production, and natural gas imports from off-shore. This mix will change over the time horizon of the report with the near-term assessment consisting of 100% North American gas.

For purposes of the WTW Report, LNG fuel use in California should reflect LNG production from pipeline natural gas within California. California's LNG supply is currently produced out of state from pipeline natural gas in Texas, Wyoming, or Arizona. In the future, LNG production will most likely revert to in-state production off natural gas pipeline systems. LNG production will be located within 100-150 miles of urban locations where fuel use will be most likely concentrated.

Summary Tables for Alternative Fuels

The WTW Report contains summary tables for all the fuel options considered in the report (Section 3). In looking at the data in the summary tables, it is not obvious which data sets are being analyzed to come up with the conclusions in the tables. For instance, in Table 3-11 for CNG vehicles, there are several ranges of data for GHG impacts for passenger cars and heavy-duty vehicles that can not be tied back specifically to data in the figures or data in the Appendices. In TIAX's presentation at the March workshop – the greenhouse benefit of CNG vehicles was reported as 27% for light-duty vehicles and 21% for heavy-duty vehicles. In Table 3-11, the 27% is captured in one point of one range, but the 21% for heavy-duty vehicles is not represented in any of the numbers for the two ranges presented.

Given the complexity of the modeling, which is far more extensive than the information presented in the reports, the Coalition would like to see (in Appendices) sample calculations with assumptions and methodology for each of the numbers presented in the summary tables. This is the only way stakeholders can review and check the validity of the numbers in the summary tables.

The need for proper documentation of the calculations is critical. In all likelihood, the summary tables will be assumed to be correct and used by policy makers to make determinations on state policies to promote alternative fuels. The natural gas vehicle industry, whose primary market is in heavy-duty vehicles, is interested in having a true representation of GHG benefits for natural gas documented in this report in order to gain agency, legislative, and administration support for

market based credit and trading systems that will capture the GHG benefits from the heavy-duty as well as the light-duty vehicles under the state's Low Carbon Fuel Standard.

Conclusions:

The Coalition feels the WTW Report is a great start in beginning to define state policies to encourage alternative fuel penetration in the state. The Coalition would like to see summary data for each fuel refined to include sample calculations on how benefits and impacts are calculated.

The Coalition also feels that regardless of the boundary assumptions adopted for the analyses, in-state and out-of-state criteria pollutant emissions and toxics should be calculated in order to determine the magnitude of emissions California is exporting to other states and other areas of the world based on policies to adopt alternative fuels in California.

The Coalition also feels that the assumption that all future criteria pollutant emissions can and will be offset within the state be reevaluated. While state environmental policy says that these emissions will be offset, until the magnitude of emissions for new alternative fuel processing plants to displace 30% of California's petroleum demand is determined, one can not arbitrarily assume that offsetting these emissions is possible. It may well be that a determination of criteria pollutants and the potential to offset emissions, may dictate that California is unable to support as much alternative fuel production as will be required for the state to achieve the defined petroleum substitution goals.

These written comments compliment written comments submitted in a February 27th letter (attached) to the CEC and TIAX. If the CEC/TIAX has any questions regarding these comments, I can be reached at 562/697-9646 to discuss.

Sincerely,

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